THE VIGILANT FEED WATER REGULATOR

D. W. PATTERSON
HARRISON BUILDING
PHILADELPHIA
BOSTON OFFICE
141 MILK STREET.

The Vigilant Feed Water Regulator

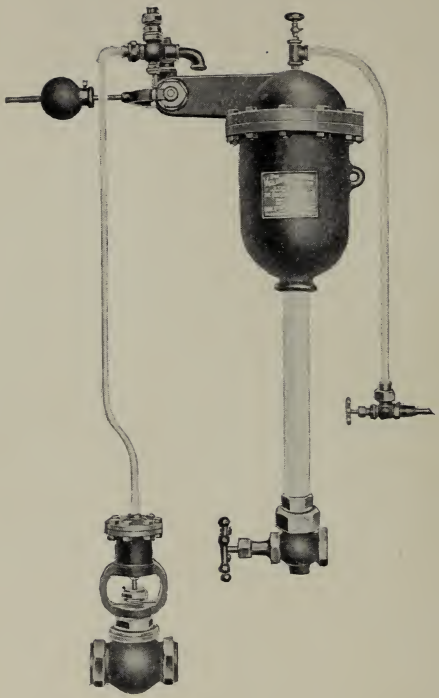
THE VIGILANT FEED WATER REGULATOR is a device for feeding water to boilers automatically and keeping the level constantly at the desired point regardless of the load or firing.

It has been on the market for eight years, working on boilers of every type and under all conditions.

There are more of them in use than all the other devices for a similar purpose on the market put together.

They are more reliable than the most careful attendant and no accident has ever happened to the thousands of boilers equipped with them.

Repeated orders show the opinions of those who use them.



VIGILANT FEED WATER REGULATOR

LOW WATER

They **prevent accidents and explosions from low water,** which is the most frequent cause of boiler explosions and generally due to carelessness of the attendant.

A regulator is much cheaper than repairs to a burnt boiler.

While thousands of these machines are used no accident of this kind has ever happened to a boiler equipped with them.

Their use may save your life and property and **they give the cheapest form of boiler and life insurance.**

DRY STEAM

The regulators **insure dry steam** for the engines, thus increasing the efficiency of the latter and decreasing the wear and cutting of the cylinders, particularly where the boilers are forced far beyond their rated capacity.

For the same reason they decrease the amount of cylinder oil required.

HIGH WATER

They prevent **flooding of the boilers** and accidents to the engines or pumps, caused by an attendant allowing the water to rise in the boiler until it is carried over into the cylinders.

One dose of water in the cylinders will cost more than a number of regulators.

REPAIRS

It will lessen the boiler repairs by feeding in the water regularly as required, **keeping the temperature uniform in the boilers,** and preventing the strains of expansion and contraction caused by feeding water, even at 200 degrees, irregularly by hand into a boiler where the temperature is 350 degrees.

There is about as much difference in temperature between hot feed water at 200 degrees and the temperature of a boiler at 125 pounds pressure as there is between ice water and boiling water.

LABOR

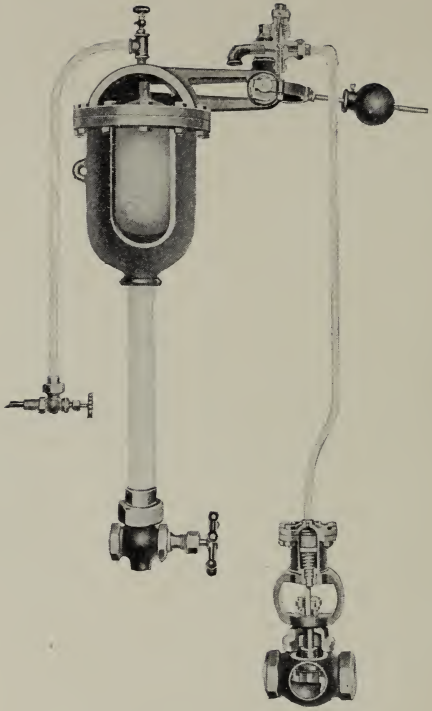
With the regulators one man can attend to 40 boilers. In medium plants no special attendant is required. In small plants one man can run the engine and boilers.

In any case they permit the fireman to give more of his time to his fire, which insures economical results.

REGULARITY

The efficiency of a steam plant depends on the regularity of its operation. Therefore, no function is more important than the boiler feeding, as on this depends the operation of the auxiliary mechanism.

No human efforts to feed a boiler uniformly can approach the regularity of our machines. They insure a constant operation of the pump, a regular flow through the heater, a uniform temperature in the boilers, and the boilers, heaters, and pumps are maintained in the condition of highest efficiency.



SECTIONAL VIEW OF VIGILANT
FEED WATER REGULATOR

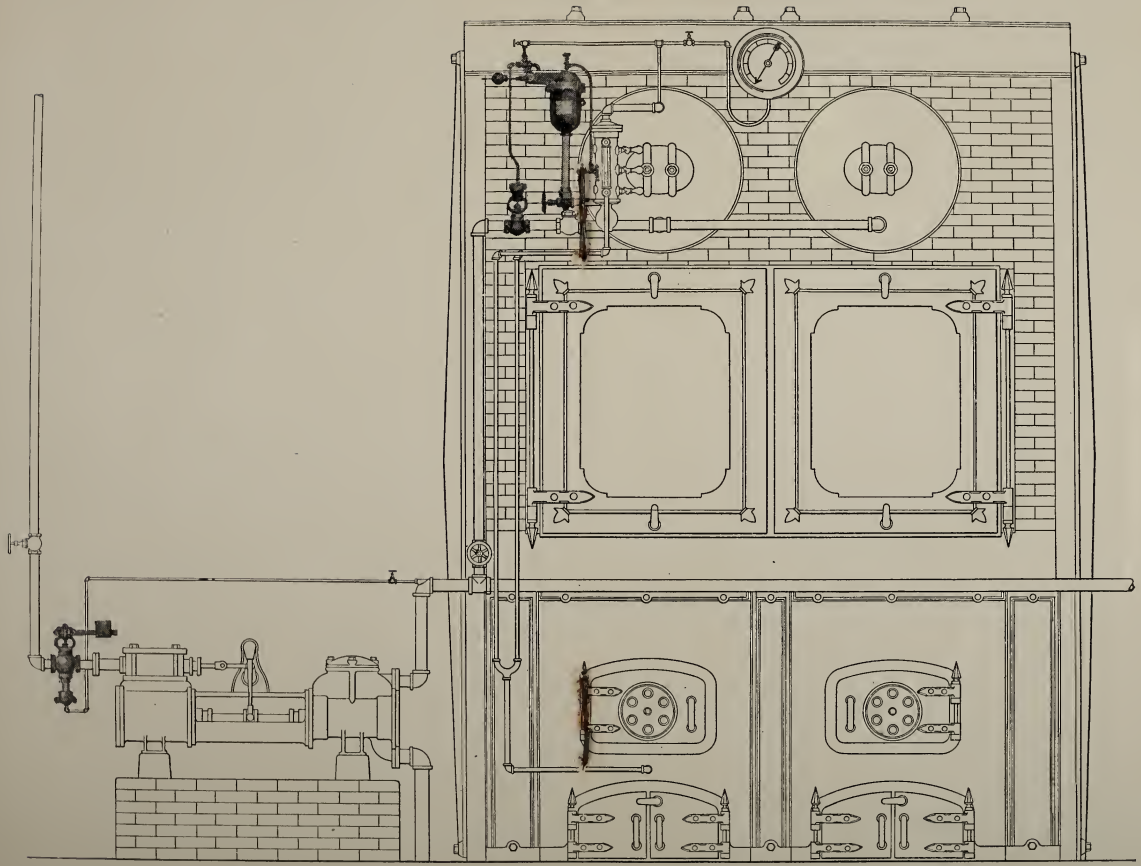
FUEL

The regulators will **effect an economy in fuel** which in the opinion of those who use them is alone sufficient to make their installation a profitable investment.

Your boilers are designed to give the greatest efficiency when the water is at the middle gauge, at which point you have the maximum heating surface and maximum steam space.

The most economical results can only be obtained when the boilers work uniformly and under the conditions for which they were designed.

It has been demonstrated that the saving in fuel effected by the use of these machines over hand regulation amounts to from 3 to 17 per cent.



VIGILANT FEED WATER REGULATOR AND FULTON PUMP GOVERNOR
APPLIED TO HORIZONTAL WATER TUBE BOILER

OPERATION

The complete installation consists of one regulator on each boiler and a governor on the steam pumps. The bottom of the regulator chamber must be 10″ above water line. The pipe from top of regulator to column connection must always be bent as in illustrations.

When the water level reaches the special connection in side of column, it seals it. The steam in the chamber condenses and it is filled with water from the boiler.

The chamber being filled with water, the copper weight weighs less than it did in the steam by the amount of water it displaces. The counter weight now overbalances the copper weight and, falling, allows steam to pass to the top of controlling valve in feed pipe, which shuts off the water.

When sufficient evaporation takes place to uncover the column attachment, steam fills the chamber and the water sinks to the boiler level. The copper weight now weighs more than the counter weight and, falling, shuts off steam, and releases pressure on controlling valve, which opens, allowing water to enter the boiler.

Fluctuations in water level seldom exceed ½″ from desired point.

The position of counter weight indicates what the machine is doing—when up, boiler is taking water; when down, water is shut off.

There are a number of reasons why our regulator has won and holds the place it does.

NO FLOATS

In the first place our apparatus **does not contain any float,** as they will leak and collapse in service in spite of all tests and guarantees to the contrary.

POSITIVE ACTION

In the second place our apparatus is positive in action. The two valves are always either closed tight or wide open and **there is no wire drawing** to cut them out.

SIMPLICITY

In the third place the machine is **extremely simple;** all the valves are outside where they can be examined at will, with nothing to clog any moving part.

NO DIAPHRAGM

There are no diaphragms to break, as they all will in time, nor any place for leakage.

ACCESSIBILITY

The whole apparatus is **separate from the column** and can be examined at will, while the boiler may be fed in the usual way.

PRICE LIST

Each Vigilant Feed Water Regulator as shipped includes

One Regulator ;

One 1¼" Brass Angle or Gate Valve ;

One 1¼" Ground Joint Brass Union ;

One Column Attachment ;

One Controlling Valve of proper size for feed pipe. Extra price if feed pipe exceeds 2½".

Vigilant Feed Water Regulator, Standard Machine for all pressures up to 200 lbs., **$125.00**

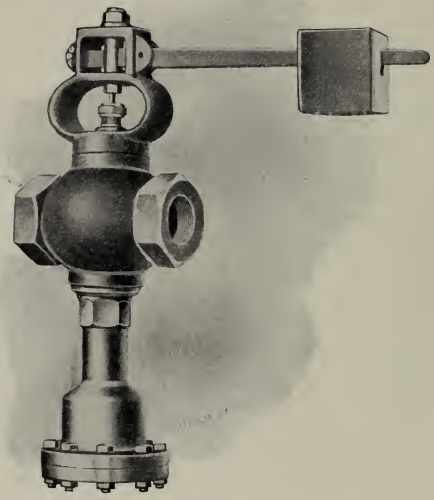
Discount on application.

THE FULTON PUMP GOVERNOR

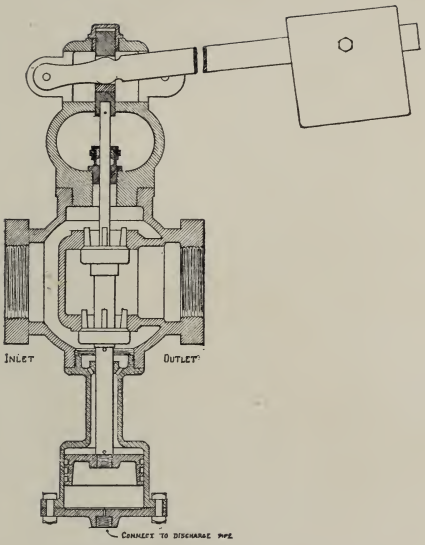
All boiler feed pumps ought to have governors on them, but with Feed Water Regulators they are a necessity. The Fulton Steam Pump Governor is the best, without exception, ever offered. Simple, novel and effective. Easily understood and operated. No complex or delicate parts to wear out.

The governor automatically regulates the speed of the pump according to the requirements of the boilers.

The distinctive feature of the governor is that it does not maintain the water pressure at a constant pressure, but maintains a constant **excess** over the steam pressure whatever that may be. By using the steam pressure to aid the weight in opening the valve against the water pressure, we do away with the immense weights or spring



FULTON PUMP GOVERNOR



SECTION OF FULTON PUMP GOVERNOR

pressures in other governors, while but little pressure is exerted on the diaphragm.

This governor can be applied also as a relief valve on power-driven pumps by reversing the valve seats and placing it between the discharge and suction pipes.

Prices of Steam Pump Governors

Size of pipe governs size of governor.

¾ in.	$27.00
1 in.	30.00
1¼ ins.	35.00
1½ ins.	42.00
2 ins.	50.00
2½ ins.	58.00
3 ins.	70.00

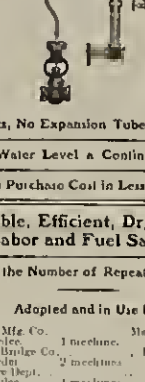
Discount on application.

"Look at the Simplicity of it"

NOTHING ON THE MARKET EQUAL TO IT

The Vigilant Feed Water Regulator is King

SUPERIOR TO ALL OTHERS



No Floats, No Expansion Tubes, No Failure

Perfect Water Level a Continual Certainty

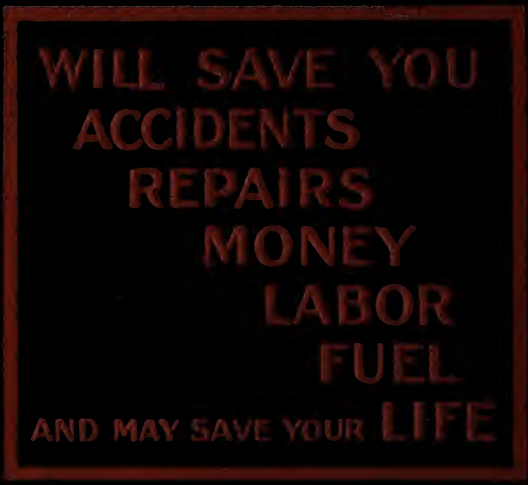
Saves its Purchase Coil in Less Than a Year

Durable, Efficient, Dry Steam Labor and Fuel Saving

Note the Number of Repeated Orders

Adopted and in Use by

Amoskeag Mfg. Co.	Manchester, N. H.
1 order. 1 machine.	
American Bridge Co.	Brooklyn, N. Y.
1 order. 2 machines.	
Buffalo Fire Dept.	Buffalo, "
1 order. 1 machines.	
Buffalo Union Furnace Co.	" "
2 orders. 10 machines.	
Lackawanna Steel Co.	" "
8 orders. 140 machines.	
Buffalo Works 130 machines.	
Colebrook Furnaces. " "	
Ore Vessels. 2 "	
Buffalo Smelting Works	Black Rock, "
2 orders. 1 machines.	
Taylor Building	New York, "
1 order. 1 machine.	
Acme Yacht Neumeshal	" "
1 order. 1 machines.	
Young Woman's Christian Assn.	" "
1 order. 3 machines.	
Central Stock Yards & Transit Co.	Jersey City, N. J.
3 orders. 7 machines.	
Moore Bros.	Elizabeth, "
1 order. 1 machine.	
American Smelting & Ref'g Co	Perth Amboy, "
1 order 1 machine.	
Roberts Boiler Works	Red Bank, "
1 order. 1 machine	
The Orford Copper Co.	Constable Hook, "
1 order. 1 machine.	
De La Mer Copper Co	Laterel, "
2 orders. 10 machines.	
United Coke & Gas Co.	Camden, "
1 order. 2 machines.	
People's Railway Co.	" "
1 order. 4 machines.	
Joseph Bancroft & Sons Co.	" "
1 order. 2 machines.	
Joseph S. & Thomas Elkinton	Phila., Pa.
1 order. 1 machine.	
F. A. Poth & Sons Co.	" "
1 order. 5 machines	
Belgrade Hotel	" "
1 order. 2 machines.	
United Gas Improvement Co.	" "
8 orders. 15 machines.	
Equitable Illuminating Co.	" "
1 order. 2 machines.	
Wayne Electric Light Co.	Wayne, "
1 order. 3 machines.	
Lukens Iron & Steel Co.	Coatesville, "
6 orders. 41 machines.	
Worth Bros. Co.	" "
4 orders. 22 machines.	
Saxton Furnace Co	" "
1 order. 2 machines.	
Parkesburg Iron Co	Parkesburg, "
1 order 3 machines.	
Pencoyd Iron Co.	Pencoyd, "
1 order. 1 machine.	
Phoenix Iron Co.	Phoenixville, "
2 orders. 3 machines.	
Glasgow Iron Co.	Pottstown "
1 order. 9 machines.	
E. & G. Brooke Iron Co.	Birdsboro, "
1 order. 2 machines.	
Reading Iron Co.	Reading, "
11 orders. 39 machines.	
Steam Forge Dept. 11 machines.	
Keystone Furnace Dept. 7 "	
Ninth St. Mill Dept. 8 "	
Tube Works Dept. 5 "	
Montouc Rolling Mill 3 "	
Crumwold Furnace Dept. 2 "	
Phila. & Reading Railway Co.	Reading, "
2 orders. 10 machines.	
American Iron & Steel Mfg. Co	" "
12 machines.	
Temple Iron Co.	Temple, "
1 order. 2 machines.	
Lebanon Rolling Mills Co.	Lebanon, "
1 order. 2 machines	
Lebanon Iron & Steel Co.	" "
1 order. 1 machine	
West End Rolling Mill	" "
1 order. 1 machine	
Buchanan-Foster Co.	" "
1 order. 1 machine	
North Lebanon Furnaces	" "
2 orders. 12 machines.	
Lackawanna Coal & Coke Co	" "
1 order. 4 machines.	
Colebrook Furnaces.	" "
2 orders. 8 machines.	
American Iron & Steel Mfg. Co	" "
11 orders. 50 machines.	
Reading Works 12 machines.	
Central Works 10 "	
East Works 4 "	
West Works 15 "	
Cornwall Ore Banks Co.	Cornwall, "
1 order. 2 machines.	
Robesonia Iron Co.	Robesonia, "
2 orders. 6 machines.	
Pennsylvania Steel Co.	Steelton, "
9 orders. 32 machines.	
Steelton Furnaces. 20 machines	
Lebanon Furnaces 12 "	
Harrisburg Rolling Mills Co.	Harrisburg, "
1 order. 22 machines.	
Central Iron & Steel Co.	" "
2 orders. 10 machines.	
Paxton Furnaces 7 machines	
No. 2 Mill. 3 "	
Susquehanna Silk Mills	Sunbury, "
1 order. 3 machines.	
Martin Carriage Works	York, "
2 orders. 4 machines.	
Hoopes & Townsend Co.	Hoopestun, "
3 orders. 12 machines.	
Dryden Horse Shoe Co.	Catasauqua, "
1 order. 1 machine.	
H. Knotenbahe & Son	" "
1 order. 3 machines.	
Crumwold Furnaces.	Limos, "
1 order. 2 machines.	
Milton Manufacturing Co.	Milton, "
7 orders. 8 machines.	
Montoor Rolling Mills	Danville, "
2 orders. 5 machines.	
American Cut & Foundry Co	Berwick, "
3 orders. 3 machines.	
People's Coal Co.	Scranton, "
1 order. 2 machines.	
Phila. & Reading Coal & Iron Co.	Pottsville, "
1 order. 3 machines.	
Standard Steel Co.	Burnham, "
2 orders. 5 machines	
Logan Iron & Steel Co	" "
2 orders. 4 machines.	
Tyrone Iron Co.	Tyrone, "
1 order. 2 machines.	
Erie Malleable Iron Co.	Erie, "
1 order. 4 machines.	
Lackawanna Coal & Coke Co.	Wehrum, "
4 orders. 21 machines.	
Wehrum Mines 16 machines.	
Lebanon Ovens 4 "	
Buffalo Ovens 4 "	
Co.	Patchburg, "
16 machines	
Works	
21 machines.	


WILL SAVE YOU
ACCIDENTS
REPAIRS
MONEY
LABOR
FUEL
AND MAY SAVE YOUR LIFE